

# 4309

Diag. Chart No. 1205-3

# 4309

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
State: <u>Maine</u>	
11-3513	
DESCRIPTIVE REPORT.	
Wire Drag	Sheet No. <u>4309</u>
Hydrog.	
LOCALITY:	
<u>Cape Porpoise</u>	
<u>Fletcher Neck to Cape Porpoise</u>	
19 <sup>23</sup>	
CHIEF OF PARTY:	
<u>O.W. Swainson</u>	

DESCRIPTIVE REPORT TO ACCOMPANY Hyd 4309

Wire Drag Sheet "C", 1923.

The wire drag work represented by wire drag sheet "C" 1923, was done during the month of October, 1923, and under instructions dated June 2, 1923.

AREA COVERED: The area covered by this survey lies between Wood Island Lighthouse, Maine, and Cape Porpoise, Maine. It adjoins wire drag sheet "B", 1923, on the North, wire drag sheet "A", 1923 on the East, and overlaps the limits of the wire drag done in 1919 by J. H. Hawley, on the South.

Both entrances to Wood Island Harbor were dragged and covered by this survey. Points where drag went aground in 1919, but no clearance depths obtained, approximate location  $43^{\circ}24'$  N and  $70^{\circ} - 23'$  W were covered and clearance depths obtained.

CONTROL: Tertiary and planetable triangulation was done around Wood Island Harbor, and for the inshore work, the few objects needed were either cut in by sextants or the locations obtained from previous surveys.

TIDES: Automatic Tide Gauges were installed at Old Orchard Beach, Maine, and Biddeford Pool, Maine, while a portable tide staff was installed at Cape Porpoise.

METHODS PURSUED: No positions were taken on the End Launch, the entire control being done on the Guiding Launch.

Before taking and recording the first position sufficient time was allowed for the drag to assume its natural curve, unless otherwise stated.

Shoals located by the drag, on which least soundings were found, are plotted on the smooth sheet and the position number at which the drag went aground, noted. As for example 16B the 24 meaning 24 ft. sounding and 16 B meaning that the drag was grounded at position 16B. When more than one sounding is taken on one position, soundings are noted thusly; 150<sup>1</sup> 2.2. The 150<sub>1</sub> means that it is the first sounding on shoal 150<sub>2</sub>. The 150<sub>2</sub> means that it is the second sounding found at position 150; 150<sub>2</sub> means that it is the second sounding found at position 150, etc. All soundings are reduced to mean low water.

The method of ascertaining effective depths is the same as that used in Wire drag sheet "A" 1923.

There are no separate sounding records. The soundings taken on shoal are recorded in the wire drag records where the grounded drag is recorded.

SHOALS: All shoals found were of a rocky nature and of small extent.

HINDRANCES: Very many lobster pots were encountered even after written notices as to areas to be dragged were posted at Biddeford Pool and Cape Porpoise, Maine, the two largest centres of lobster fishermen, and the areas to be dragged were buoyed off. We removed as many of these pots as was possible, which tended to slow up the work.

In dragging the entrances to Wood Island Harbor, the drag was considerably retarded due to the extremely long grass growing on the bottom.

Isidor Rittenburg,  
Deck Officer.

*O.W. Swainson*  
*Chief of Party*

# STATISTICS FOR WIRE DRAG SHEET C.

DATE 1923.	LETTER	VOLUME	POSITIONS	SOUNDINGS	STATUTE	MILES	TIDES
Oct. 9	A	1	65	7	5		Bidd. Pool
Oct. 10	B	1	43	6	4.5		" "
Oct. 11	C	1	55	4	5		" "
Oct. 15	D	1	45	0	4		Cape Porpoise
Oct. 16	E	2	67	1	4.5		Bidd. Pool
Oct. 17	F	2	44	2	5		" "
			319	20	28.0		

All Soundings in Feet.

Plane of Reference of Bidd. Pool Gauge - Mean low water.

Lowest Tide on Bidd. Pool Gauge

Highest Tide on Bidd. Pool Gauge

Plane of Reference of Cape Porpoise Staff - Mean low water.

Lowest Tide on Cape Porpoise Staff.

Highest Tide on Cape Porpoise Staff.

Vessels Used - OGDEN and RODGERS.

Boat Sheet Accompanies Smooth Sheet.

*Extra copy for Field Records*

January 25, 1924.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in  
2 volumes of ~~reducing~~ records for  
wire drag

HYDROGRAPHIC SHEET 4309

Locality: Wood Island to Cape Porpoise, Maine.

Chief of Party: O. W. Swainson in 1923.

Plane of reference is Mean low water reading

3.8 ft. on tide staff at Cape Porpoise

3.7 " " Auto gauge at Biddeford Pool.

For reduction of soundings, condition of records satisfactory  
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

*E. H. de*

Chief, Division of Tides and Currents.

## Wire Drag Sheet No 4309

The ground has been well covered within the limits of the work, but it seems that a greater effective depth might have been used in some places. Three small splits were found when the sheet was verified.

There are a number of places where the drag went aground but no sounding was taken. These are indicated on the sheet with an explanatory note.

The records are incomplete and unsatisfactory. In the first place a separate sounding record should have been kept instead of entering soundings in the drag record (Par. 247 General Instructions). The party has failed to enter the "length of upright," the "lift correction" and the "effective depths" in their proper columns in the records. The usual stamps at the end of each day have also been omitted.

The plotting and subdivision of the drag work is only fairly well done. Several strips were taken out and replotted.

R. L. Johnston

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

October 24, 1924.

SECTION OF FIELD RECORDS

Report on Wire Drag Sheet H. 4309

Cape Porpoise, Maine

Surveyed in 1923.

Instructions dated June 2, 1923

Chief of Party, O. W. Swainson.

Surveyed by O. W. Swainson.

Protracted and inked by I. Rittenberg.

Verified and Area and Depth Sheet by R. L. Johnston.

1. The records are defective in the following respects.

a. The usual stamp at the beginning of each day's work giving the information as to the length of drag, length of sections, tow line length, weather, etc. has been omitted.

b. No entries were made in the columns marked "length of upright", "correction" and "effective depth", making it necessary for the office verifier to make the reductions. This is specifically required by paragraph 248 of the General Instructions.

c. The soundings discovered by the drag are scattered in the wire drag records throughout the work instead of entering all in a separate sounding record as required by paragraph 247 of the General Instructions.

d. The effective depth diagrams at the end of each day's work were not made to conform to that called for in paragraph 249 of the General Instructions nor do they conform to the more modern method of pictureizing each drag strip on a miniature scale. Instead a method which is much inferior to either of the above two was used. The diagram was prepared in a careless and slovenly manner and was of little aid to the office verifier.

e. The usual stamps at end of day giving the names of the officers who made and checked the various entries were omitted.

f. The records show no indications of any drag tests having been made, although there is a uniform lift correction of 1 foot applied. *1 ft. lift, apparently was not applied on some shoals (10 ft. in lat 43° 25' 10", long 70° 21' 57") see pos. 46B and wire drag Vol. I page 25, H-4309. 9 ft. found here on H-4254 (1955) LSS. 4/27/61.*

2. The extent of dragging generally satisfies the specific instructions. However, the depth of dragging neither conforms to the General Instructions or the Specific Instructions. The Specific Instructions call for the dragging of areas of less depth than 20 fathoms to within 10 feet of the bottom. This is too general and it was doubtless intended for areas between 50 and 100 feet while in less depths to within 3 feet of the bottom, which would be in conformity with paragraph 245 of the General Instructions and uniform practice.

As the work now stands very few of the areas that have depths of around 60 feet have been dragged to within 10 feet of the bottom while practically none of the areas of less depth than 50 feet have been dragged to within 3 feet of the bottom. The inshore limits in particular have been dragged to much too shoal a depth when it is considered that the charted depths in many cases exceed the effective depths by 20 to 30 feet.

Attention is especially called to the fact that in Wood Island Harbor where the latest survey (H. 4304) as executed by this party shows general depths of 15 and 16 feet the greater portion of the area used as an anchorage was dragged to an effective depth of 3 feet. Other portions of the anchorage were dragged to 4, 7, and 8 feet. To quote in part from Section A, Coast Pilot, Atlantic Coast, page 207, under Wood Island Harbor: "Wood Island Harbor is an anchorage for small vessels of about 12 feet or less draft. The anchorage with best shelter is about 200 yards northeastward, northward, or northwestward of Philip Rock spindle in a depth of 15 feet." It is to be noted that the drag on this day's work was set to an effective depth of 9 feet in the center and 4 feet on each side. With the drag about to swing into Wood Island Harbor and before buoy No. 4 set at 9 feet went aground, the entire drag was raised to an effective depth of 4 feet and with the rise of the tide brought the effective depth through the heart of the anchorage to 3 feet. The only possible explanation that presents itself, in the absence of any positive statement from the Chief of Party, for dragging to such an extremely shoal depth is that the long grass growing on the bottom (as mentioned in the descriptive report and in the record) prevented the setting of the drag to a deeper depth. So for all practical purposes this area may be considered as not dragged.

3. The least water was found over all shoals discovered except as follows:
  - a. The 29 foot sounding (grounding depth) in latitude 43° 21 1/2', longitude 70° 25' has not been cleared. The records show no indi-

cation that the line was broken nor that the drag was lifted over the shoal, so it is possible that the rise of the tide cleared the drag. As this lies very close to the reef making out from Cape Porpoise it is not believed necessary to require additional dragging.

b. The 19 foot sounding in latitude  $43^{\circ} 22 \frac{1}{2}'$ , longitude  $70^{\circ} 24 \frac{3}{4}'$  is shown on the smooth sheet as cleared by an eleven foot drag, but in reality that portion of the drag that passed over the 19 foot sounding was set at 16 feet. Owing to an inflexible rule of wire drag this could not be shown. Therefore this spot was sufficiently cleared.

c. The 29 foot sounding in latitude  $43^{\circ} 25'$ , longitude  $70^{\circ} 22 \frac{1}{4}'$ . A 29 foot drag grounded here and a 29 foot sounding was obtained, but only a 10 foot effective depth drag was carried over this. This can hardly be considered as obtaining the least water over the shoal.

d. The 41 foot sounding in latitude  $43^{\circ} 25 \frac{1}{2}'$ , longitude  $70^{\circ} 21 \frac{1}{4}'$ , was obtained when a 49 foot effective depth grounded. The clearance depth over this spot was only 20 feet.

e. In latitude  $43^{\circ} 25 \frac{1}{4}'$ , longitude  $70^{\circ} 21'$ , a 35 foot drag (not shown) grounded and 27 feet obtained. A 21 foot drag was subsequently passed over. The drag should have been set closer to the bottom.

f. The 33 foot sounding in latitude  $43^{\circ} 25 \frac{1}{4}'$ , longitude  $70^{\circ} 20 \frac{1}{2}'$  should have been cleared by a drag deeper than 20 feet.

g. The 20 foot sounding in latitude  $43^{\circ} 26'$ , longitude  $70^{\circ} 20 \frac{3}{4}'$  lies along the inshore limits of the drag. As the area inshore of this sounding is very much broken and as it lies close to a 10 foot spot it would hardly seem necessary to cover this particular spot.

→ h. The 12 foot sounding in latitude  $43^{\circ} 26 \frac{1}{4}'$ , longitude  $70^{\circ} 20'$  was cleared by a 4 foot drag. While this sounding lies on the outer edge of a reef making out from Beach Island still it should have been cleared by a deeper drag as a 10 foot drag was carried inside of this sounding.

→ i. The 35 foot sounding in latitude  $43^{\circ} 26 \frac{1}{2}'$ , longitude  $70^{\circ} 19 \frac{1}{2}'$  was cleared by a 16 foot drag. This sounding lies about  $\frac{1}{4}$  mile east of Whale Rock Ledge and practically in the path of boats making Wood Island Harbor.

j. The 21 foot sounding in latitude  $43^{\circ} 26 \frac{3}{4}'$ , longitude  $70^{\circ} 19 \frac{1}{4}'$  was cleared by a 13 foot drag. The drag should have been set closer to the bottom.

K. The 22 foot sounding in latitude  $43^{\circ} 26 \frac{3}{4}'$ , longitude  $70^{\circ} 19'$  was covered by a 13 foot drag. This is a part of the same shoal that the charted 19 foot sounding is on. The 19 plots too close to the limits of the 24 foot effective depth area to say with certainty that it passed over it. It is more probable that the 13 foot drag passed over this shoal. It would have been very desirable to have passed a deeper drag over this spot.

→ l. The 17 foot sounding (grounding depth) in latitude  $43^{\circ} 27'$ , longitude  $70^{\circ} 19 \frac{1}{2}'$ , was not cleared. This is too close to Dansbury Reef to require further dragging.

→ m. The 18 foot sounding (grounding depth) in latitude  $43^{\circ} 27 \frac{1}{2}'$ , longitude  $70^{\circ} 19 \frac{1}{2}'$  lies very close to Wood Island and does not require further dragging.

→ n. The 17 foot sounding (grounding depth) in latitude  $43^{\circ} 27 \frac{1}{2}'$ , longitude  $70^{\circ} 20 \frac{3}{4}'$ , was covered by a 5 foot drag. This should have been cleared by a deeper drag.

→ o. The 24 foot sounding in latitude  $43^{\circ} 28'$ , longitude  $70^{\circ} 20 \frac{1}{2}'$ , was not cleared. This lies close to Ram Island Ledge and does not appear necessary to drag over.

p. The 9 foot sounding (grounding depth) was cleared by a 4 foot drag. It is possible that 9 feet is the least depth here since a note in the records says "just touching bottom". This note, however, was later scratched out, so it must be considered as the shoalest depth not having been found here.

q. The two 22 foot soundings (grounding depths) in the vicinity of latitude  $43^{\circ} 24'$ , longitude  $70^{\circ} 23'$  have been covered by an effective depth of 17 feet. The <sup>one</sup> further to the south probably represents the shoalest depth in this spot, as the drag grounded at 22 feet and slipped off. The record for the grounding at 38 C is not very clear and it is not certain that this grounding is not at the same spot as the one at 37 C where the drag slipped off. However, it is safer to show them as two separate groundings.

r. The 12 foot sounding (grounding depth) in latitude  $43^{\circ} 24'$ , longitude  $70^{\circ} 23'$  is probably the least water here. The drag grounded here but no indication in the record of having been cleared. The line continues without a break. It is therefore possible that the drag grounded and slipped right over.

4. The overlaps within the sheet are sufficient. The junction with H. 4087 is adequate. The gap left between the two sheets at the southeastern corner of the sheet was covered by H. 4308. The junction with H. 4308 will be taken up in the review of that sheet.

5. There are three small splits on this sheet all shown on the Area and Depth sheet.
6. The field plotting was completed to the extent prescribed in the General Instructions. Some of this had to be changed by the office draftsman on account of not being done carefully.
7. (a. Character and scope of drag operations - Fair.  
Rating of the work (  
(b. Field drafting - Fair.
8. Reviewed by A. L. Shalowitz, October, 1924.

Note:

41 days were required for the office verification (by the two most experienced cartographers) of this sheet.

This excessive amount of time was due to faulty field plotting and to defective records. Had the field plotting and records been in good shape the office verification and review would not have needed more than 14 days.

*E. P. Lee*

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEYHYDROGRAPHIC TITLE SHEET  
WIRE DRAG

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4309

State Maine  
General locality Cape Porpoise  
~~Hood Island Lt. to Cape Porpoise~~  
Locality Fletcher Neck to Cape Porpoise  
Chief of party O. H. Swainson  
Surveyed by Wire Drag Party #1  
Date of survey October, 1923  
Scale 1:20,000  
Soundings in Fath  
Plane of reference Mean Low Water  
Protracted by J. Rittenburg Soundings in pencil by J. Rittenburg  
Inked by J. Rittenburg Verified by R. L. J.  
Records accompanying sheet (check those forwarded):

✓ Des. report, ✓ Tide books, ✓ Marigrams, ✓ Boat sheets, ✓  
Sounding books, 2 Wire-drag books, Photographs.

Data from other sources affecting sheet

See chart accompanying "A" sheet.

Remarks: The above tidal data forwarded November 28, 1923,